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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Federal-State Joint Board on)	CC Docket 96-45
Universal Service)	
)	
Forward-Looking Mechanism)	
for High Cost Support for)	CC Docket 97-160
Non-Rural LECs.)	(DA 98-1587)

JOINT REPLY COMMENTS OF BELLSOUTH TELECOMMUNICATIONS,
INC., US WEST, INC., AND SPRINT CORPORATION TO COMMON
CARRIER BUREAU REQUEST FOR COMMENT ON MODEL PLATFORM
DEVELOPMENT.

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Bell South, US West and Sprint Corporation (hereinafter "Joint Sponsors")
respectfully submit their replies to comments filed on August 28, 1998 in the
above-captioned matter.

I. HCPM Requires Validation

Prior to responding to the specific positions offered in the comments, the
Joint Sponsors wish to discuss the one concern regarding the HCPM echoed by
virtually all commenters. In their own comments, the Joint Sponsors conclude
that "[e]ven though the HCPM has definite potential, it needs intense testing
with actual customer location data" (Joint Sponsors at p. A-17). Likewise, GTE
points out that HCPM has, thus far, been populated with only test data.
According to GTE, "[e]xternal validation, comparing a model's output to

verifiable, real-world data, is essential in evaluating its merits. By furnishing a model with test data only, the Commission has made it impossible for parties to validate HCPM's output and has limited parties to providing comment on its theoretical structure." (GTE at p. 3). MCI expresses its frustration at trying to run the HCPM model and notes that "[u]ntil data for more states can be run through the two algorithms and the results compared, no comparisons of the merits...is possible." (MCI at p. 5). AT&T acknowledges that HCPM has promise, but notes that "[w]hile random or preliminary test data may be useful in beginning to evaluate a model's performance, it does not provide the needed basis for benchmarking the HCPM relative to other models such as the HAI and BCPM that have been provisioned with their complete data sets." (AT&T at p. 6). Finally, as discussed in more detail below, Bell Atlantic compares actual data for the state of Maryland to HCPM's results and expresses grave concern over the need to further verify the model's validity (Bell Atlantic at pp. 5-8).

As it makes its decision on a model, the Commission should heed these words of caution. The Joint Sponsors continue to believe that HCPM does have potential; however, potential cannot take the place of validation of the model using actual data.

II. Bell Atlantic

In its comments, Bell Atlantic discusses comparisons of the HCPM model results to its own actual data for the state of Maryland. Bell Atlantic observes that HCPM "produces unexplainable results at the wire center level." (Bell

Atlantic at p. 5). More specifically, Bell Atlantic observes that, although the Bureau's model calculates line counts for the entire state that closely match actual line counts, differences at the wire center level in many cases exceeded well over 100%. Additionally, Bell Atlantic asserts that the statewide average loop length calculated by the model exceeds the actual average by 16% while, at the wire center level, modeled loop lengths vary by wide extremes from actual lengths.

The validity of the comparisons offered by Bell Atlantic must be viewed in light of the realities of the Bureau's test data. The Joint Sponsors understand that the Maryland data released by the Bureau for test purposes was made up of randomly generated customer location points, not actual customer locations. Furthermore, in establishing wire center boundaries, the Bureau relied upon "On-Target", a database abandoned by both the HAI and BCPM modelers due to its unreliability. Given this background information, it is not surprising that the HCPM wire center results for the test state varied widely from Bell Atlantic's actual wire center line counts and loop lengths.

As explained to the Joint Sponsors, the Bureau's intent in using test data was not necessarily to provide "production-mode" results, but rather to allow interested parties to review and test the logic employed by the HCPM model on a set of sample data. In other words, the Bureau was seeking to find whether its model built functional and efficient loop plant given a set (any set) of customer location points -- not whether its model captured the amount of loop plant

necessary to serve specific areas of Maryland. Consequently, the Joint Sponsors assert that, in this sense, Bell Atlantic's critique is of little use to the task at hand.

At the same time, it must be stressed that, as noted above, a conceptual review of a model's approach is no substitute for validating the model in light of actual information. In this respect, Bell Atlantic's analysis sheds light on a pertinent point that has been ignored in this process; that is, no party can endorse a model that only "appears" to build a reasonable amount of loop plant "in theory" or "in concept". After all, real dollars are going to flow based on the results produced by the model that is ultimately selected. This means that the model must hold up to thorough scrutiny of all aspects beginning with the customer location assumptions all the way through to the support calculations. Such scrutiny logically and necessarily includes comparisons to actual data. So far, this type of comparison has not been possible with HCPM because of the availability and use of only "test" data.

III. AT&T

AT&T opines that any algorithm or approach should be chosen only after it has been demonstrated that the approach, as implemented, will produce reasonable cost estimates using real world data (AT&T, at p. 2). The Joint Sponsors agree. However, the Joint Sponsors find it supremely ironic that AT&T would still advocate use of the HAI Model when it has been documented on numerous occasions that the HAI model fails the very test endorsed by AT&T --

that of using real world data to produce reasonable costs.¹ The fatally flawed customer location algorithms contained in the HAI preprocessing guarantee that: 1) real world location data will be *ignored*, not used; 2) rural areas will be underbuilt by the model; and 3) the costs produced by the HAI are inaccurate and unreasonable. Therefore, AT&T's suggestion (at p. 7) that the Commission should adopt the HAI Model as a "base platform" cannot be seriously considered by virtue of AT&T's own criteria.

The Joint Sponsors also find it ironic that AT&T would suggest adopting a "road surrogating" approach, but only if certain enhancements suggested by AT&T are also adopted. The implication here is that, without AT&T's enhancements, a non-road surrogating approach is somehow preferable to one using roads. The Joint Sponsors find this suggestion curious since the HAI's current surrogating approach (using census block boundaries) has been known to place customers in rivers, on railroads, in oceans, and in locations several miles from the closest road. The Joint Sponsors believe that a surrogating method that focuses on where customers are known to live (i.e. along roads) and that is highly correlated with known population distributions (as the approach used by the BCPM is) is the proper method for dealing with unknown locations.

Finally, with regard to AT&T's comments on clustering algorithms, it is important to keep in mind the difference (which exists in the HAI preprocessing) between deciding which customers will be served in groups (which is clustering),

¹ Sprint FCC *Ex Partes*, April 17- 30, 1998.

and the creation of artificial polygons that distort actual distances between customers. To the extent that the HCPM clustering algorithm does not result in the distortion that is automatically built into the HAI approach, the Joint Sponsors strongly support the HCPM method as clearly superior to the HAI/PNR algorithm. Moreover, to the extent that AT&T believes actual customer location data is required to validate any clustering algorithm (AT&T at p. 5), the Joint Sponsors must point out that the HAI Sponsors have never released the actual data used in their algorithms so that they might be validated. Again, using AT&T's own criteria, the HAI model fails its own test.

Finally, the Joint Sponsors note that the HCPM's clustering algorithm allows the user the option of using either an 18,000-foot or a 12,000-foot constraint when creating clusters. The Joint Sponsors see this as a unique advantage over the PNR/HAI approach since the issue of an appropriate maximum copper loop length for any model remains unresolved as of this date. The Joint Sponsors recommend that the Commission take particular notice of recent developments in the ongoing deployment of ADSL-type services and the requirements for these types of advanced services as they relate to a maximum copper loop length.

IV. MCI

With regard to a surrogating methodology for non-geocoded points, MCI states that placing customers uniformly along all roads is likely to result in an excessive amount of customer dispersion which would tend to inflate costs (MCI

at p. 3). However, MCI goes on to state that "...the HAI Sponsors have demonstrated that placing customers along all roads, rather than along the CB boundary tends to lower costs somewhat." (*Id.*). The Joint Sponsors assert that the criterion for an appropriate surrogating methodology should not be whether it tends to produce low costs or high costs, but rather whether it reflects *with highest probability* a means of placing customers where they are most likely to live. There is no *a priori* reason to think a customer is more likely to live on a road that happens to be a census block boundary than on any other road in that census block. There is, however, strong reason to believe that a customer lives on *some* road as opposed to *no* road at all. Hence, a proper surrogating methodology will account for any and all roads, as the BCPM method does.

V. GTE

GTE offers a great deal of useful input regarding the issues raised in the public notice. The Joint Sponsors note particularly GTE's discussion of customer location. Both GTE and the Joint Sponsors recommend use of a geocoding success rate threshold and use of the BCPM algorithm where accurate geocode data does not exist. While the specific threshold recommended by GTE differs from that offered by the Joint Sponsors, the rationale and the effect are the same.² GTE concurs in the position outlined in the Joint Sponsor's comments that, where

² GTE recommends use of geocode data only in wire-centers with line counts exceeding 20,000 lines, while the joint sponsors recommend use of geocode data only in areas where the success rate exceeds 80-85%. Exhibit 1 in the GTE comments shows that the average geocoding success rate for wire-centers exceeding its recommended threshold of 20,000 lines appears to be approximately 80%.

geocode success rates are low, combining these customer location points with surrogate customer location points is likely to create a biased estimate of actual plant requirements compared to use of a surrogate alone.

VI. Western Wireless

Western Wireless responded to the Bureau's request for comment by providing an advance advertisement for its yet-to-be-released HAI Wireless Model. The Joint Sponsors urge the Commission to reject Western Wireless's speculative contribution to this discussion. As of the date of these comments, there is no model – if there is, Western Wireless has yet to release it.

Consequently, it is impossible to comment on the value or validity of such a model. Moreover, based on the rather sketchy description provided in the comments, the idea of a wireless model contributes little to the debate being conducted here. For instance, while Western Wireless recognizes that there are differences between the manner in which wireless and wireline customers are served, it does not offer any explanation as to how its model would capture such geographic variables as topography and other characteristics unique to the provision of wireless services.

The Joint Sponsors are not suggesting that wireless technology should be ignored in the universal service scheme. However at this time, Western Wireless has not provided anything tangible upon which the cost model ultimately adopted could rely to factor-in the unique qualities possessed by wireless.

Therefore, the Commission should dismiss the comments provided by Western
Wireless on model platform development.

Respectfully submitted,

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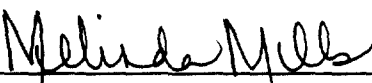
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September 11, 1998

CERTIFICATE OF SERVICE

I, Melinda L. Mills, hereby certify that I have on this 11th day of September 1998, served via U.S. First Class Mail, postage prepaid, or Hand Delivery, a copy of the foregoing "Reply Comments of BellSouth Telecommunications, Inc., US WEST, Inc., and Sprint Corporation to Common Carrier Bureau request for Comment on Model Platform Development" in the Matter of Federal-State Joint Board on Universal Service and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45, 97-160, filed this date with the Secretary, Federal Communications Commission, to the persons on the attached service list.



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